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BEN DAY SHADING MEDIUMS

FOR ART WORK ON STONE, METAL & CARD BOARD

Invented by Benjamin Day
Used by the leading Lithographers and Photo Engravers of the World.

BEN DAY, INC.
118 E. 28th Street, New York.

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1920

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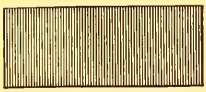
THE BEN DAY
SHADING MEDIUM APPARATUS
HOW TO WORK IT

SELECTIONS



No. 1.—13 x 13

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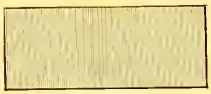
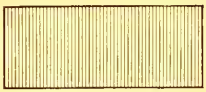


No. 4.—9¾ x 9¾

No. 5.—13 x 13



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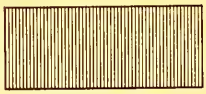

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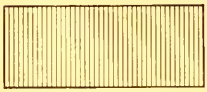
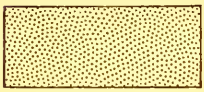


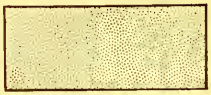
No. 11.—13 x 13

No. 16.—9¾ x 9¾



No. 432.—9¼ x 14¼

No. 433.—9¼ x 14¼



No. 437.—9¼ x 14¼

No. 440.—9¼ x 14¼

No. 507.—13 x 13

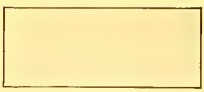
No. 509.—9¼ x 14¼

No. 526.—9¼ x 14¼

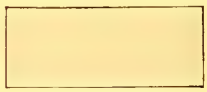
No. 527.—9¼ x 14¼

No. 533.—Half-tone
85 to inch—9¾ x 9¾

No. 534.—Half-tone
100 to inch—9¾ x 9¾



No. 535.—Half-tone
120 to inch—9¾ x 9¾



No. 536.—Half-tone
133 to inch—9¾ x 9¾

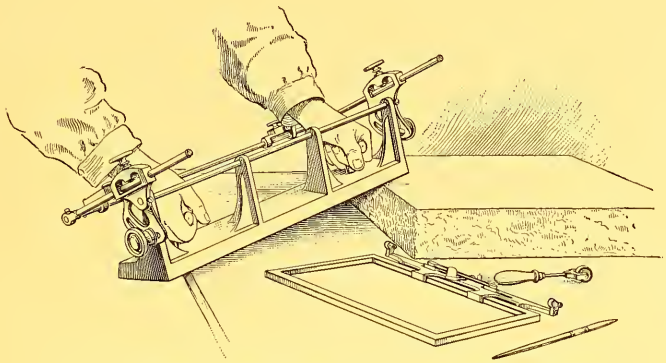
FROM PROOF BOOK OF
THE BEN DAY SHADING MEDIUMS

MECHANICAL ADJUNCTS

OF THE

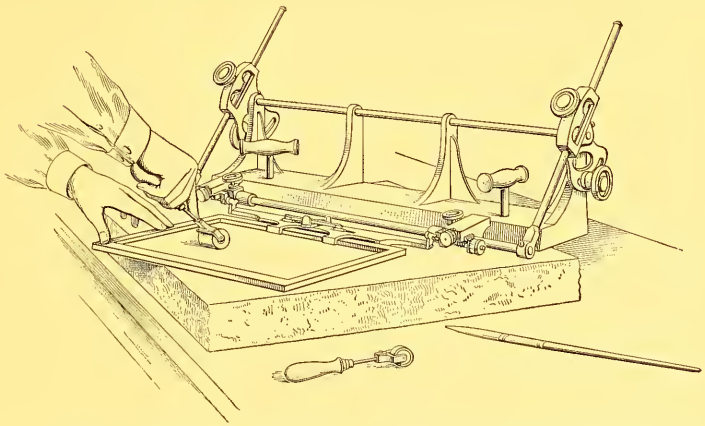
BEN DAY SHADING MEDIUMS

THE HOLDFAST; MICROMETRIC ADJUSTERS; FRAME CLAMP; PROCESS APPARATUS; INKING PAD; TUBULAR INKING ROLLER, ETC.



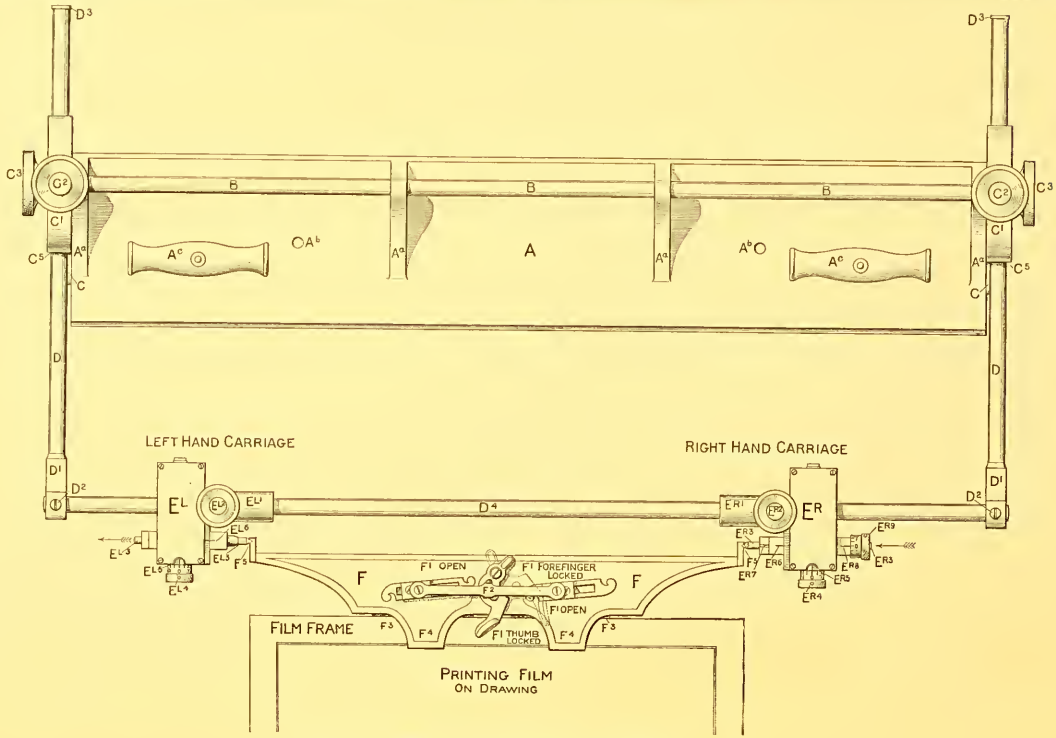
PLACING THE HOLDFAST ON A LITHOGRAPHIC DRAWING

It may be lifted by its handles to any part of the work



THE HOLDFAST MOUNTED ON A LITHOGRAPHIC DRAWING

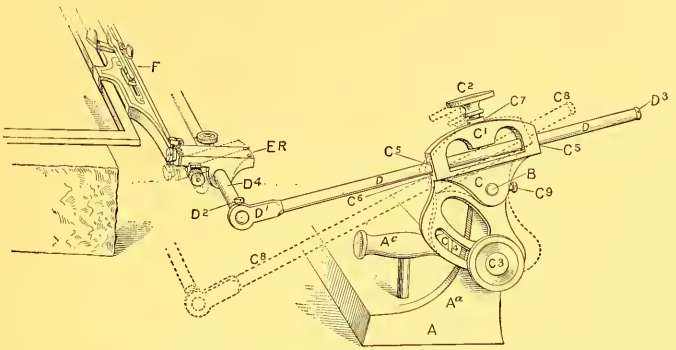
Side rods drawn downward. The operator is transferring a print from an inked Shading Medium by means of a rubber pressing roller



FULL DOWN VIEW OF THE HOLDFAST

The Micrometric Adjusters and the Single Lever Frame Clamp

SIDE VIEW, RIGHT, OF THE HOLDFAST



DETAIL OF ILLUSTRATIONS—ALL PARTS

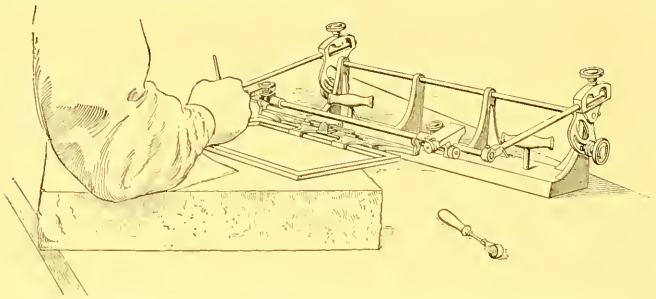
A, base; A^a, studs of base; A^b, base holes for screws to bind machine to table, if desired; A^c, lifting handles: B, cross-rod, bearing sector wings CC, which raise or lower side-rods DD, and forward rod D^4. C^8, C^8, illustrate the elevating movement of CC, controlled by clamping screws C^3, C^3. The extension movement of DD is effected by drawing DD through the boxes C^1, C^1, controlling same by the clamping screws C^2, C^2. D^4 carries the adjusters E^L and E^R, the pintles of which at E^{L3}, E^{R3}, carry the frame clamp F which holds the Printing Film. The front index wheels E^{L4}, E^{R4}, shift the Printing Film for increasing color in a tint *perpendicularly*. The side index wheel E^{R9}, shifts it for color increase *laterally*. E^{L1}, E^{R1}, are sleeves of E^L and E^R, sliding on D^4 to engage E^L and E^R with F. They also revolve on D^4 to adjust the film frame carried by F to a level on the drawing. E^{L2} and E^{R2} bind E^L and E^R to D^4. E^{L5}, E^{R5}, are guide marks by which to regulate the movement of the index wheels E^{L4} and E^{R4}, when they operate E^{L3} and E^{R3} with F^5, F^5, backward or forward. E^{R8}, is the guide mark for the side index wheel E^{R9}. F is attached to the film frame by the lever F^1. F^1 slides the lever bar F^2, which opens or closes the sliding blocks F^3, F^3, which lock the film frame against the clamp-lips F^4, F^4. F^5, F^5, are socketted ears which engage the adjuster pintles E^{L3}, E^{R3}, holding the Shading Medium in registered position. The ears are so shaped that they sustain the Medium at a resting slant against the barrels of E^L and E^R when it is turned up and backward from the work.

THE BEN DAY SHADING MEDIUMS
AND
THEIR MECHANICAL ADJUNCTS

THE HOLDFAST APPARATUS
[SEE ILLUSTRATIONS]

Figures 1 and 2 show all parts of the machine. The functions of the parts are detailed under Figure 1.

Before starting work, see that the apparatus is adjusted, in connection with the Frame-Clamped Shading Medium to the *level of the drawing*, and that all



THE HOLDFAST ON THE DRAWING TABLE APPLIED TO LITHOGRAPHIC WORK

binding screws are fastened. The Adjusters, E^L and E^R should lie level on the cross-bar D^4. Lock E^R to the bar first. Take the Frame-Clamped Shading Medium and engage the right ear socket of the Frame Clamp at F^5 with the stationary pintle point of E^R. Then move the Adjuster E^L along the bar D^4 until its *spring* pintle engages the left ear socket of the Frame Clamp at F^5. It should engage this firmly but with *sufficient spring-play after it is locked to the bar* to permit the release of the Frame Clamp from between the two pintles for the inking of the Shading Medium.

Before laying a tint, see that all three Adjuster Wheels register 0 at the guide marks E^{L5}, E^{R5}, E^{R8}; also that the scratch-lines E^{L6}, E^{R6} line with the scratch-lines opposite them on the fixed Adjuster parts. Operations are thus begun with the Adjusters in a *middle field*, ready for increased color movements in a forward, backward or lateral direction. The two front dial wheels, moved together to corresponding degrees, increase color *vertically;* the right side dial wheel, *laterally*. As the mesh values of tints differ, so the movements given the micrometric wheels must vary, in finer or greater degree, dependent upon the tint in use. A mechanical stipple such as No. 507 may be closed into a solid line, if necessary, by a series of movements aggregating $3\frac{1}{2}$ to 4 degrees.

After each movement and tint-lay, the Shading Medium must be disengaged for re-inking. Press the thumb against the left ear of the Frame Clamp; this pushes back the spring pintle of E^L, thus relieving the Medium. Then place the Medium upon the aluminum inking pad, re-ink and re-adjust for the succeeding movement and lay.

The Frame Clamp fits any film frame. It has resting ears at F^5, F^5, which bear back upon the sleeves of the Adjusters at E^{L1}, E^{R1}, there sustaining the Medium at a resting slant when it is turned backward from the drawing. The Medium should be turned back gently *(not thrown back)* to preserve the registry of the Shading Medium.

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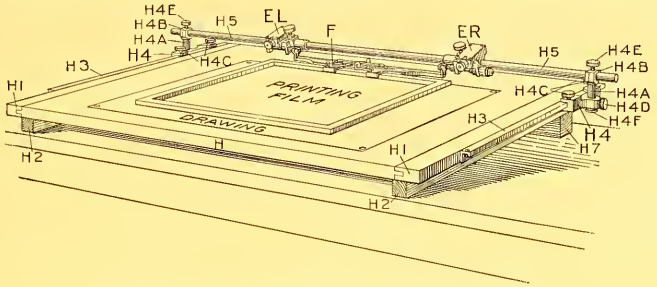
THE BEN DAY DRAWING BOARD APPARATUS

This is for process-work on cardboard, or direct work on zinc or copper plates. (See illustration.) H is the drawing board, equipped with metal side grooves H^3, H^3, along which move two sliding clamps H^4, H^4. These clamps have vertical sliding posts H^{4A}, H^{4A}, which bear the cross-bar H^5. The sliding posts



THE BEN DAY DRAWING BOARD APPARATUS
FOR WORK ON COPPER, ZINC OR CARDBOARD

H, Drawing board. H^1, Side battens of board. H^2, Under battens. H^3, H^3, Channeled side bars. H^4, H^4, Clamps sliding on H^3, H^3, holding cross-rod H^5. H^{4A}, H^{4A}, Vertical sliding posts of H^4. H^{4B}, H^{4B}, Bearings of H^{4A} carrying H^5. H^{4C}, H^{4C}, Screwheads clamping H^4 to H^3. H^{4D}, H^{4D}, Screw-heads clamping vertical posts H^{4A}, H^{4A}. H^{4E}, H^{4E}, Screw-heads clamping cross-rod H^5. H^{4F}, H^{4F}, End stops of H^{4A}. H^5, Cross-rod carrying adjusters E^L and E^R. H^7, Wood-block suggested for use under rear of drawing board to hold board at working slant. E^L, E^R, Micrometric adjusters. F, Single lever frame clamp.

move up or down through the clamps H^4, H^4, raising or lowering the cross-bar H^5. H^5 carries the Adjusters E^L, E^R, which in turn hold the Frame Clamp F and the Shading Medium over the drawing.

The drawing on cardboard or plate should be fastened to the drawing board by *flat* tacks. Before starting work see that the Shading Medium has been adjusted to a perfect level on the drawing by the operation, up or down, of H^{4A}, H^{4A}, fastened by H^{4D}, H^{4D}. All binding screws must be likewise secured. Before work, see that the three micrometer wheels of the Adjusters are registered at 0 with the guide marks E^{L6} and E^{R6} lining with the scratch marks on the Adjuster Boxes.

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GENERAL RULES FOR WORKING

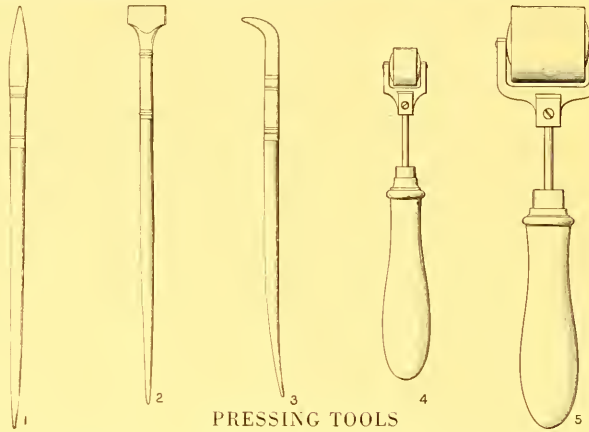
Inking the Medium—The Inking Pad—The Inking Slab—The Tubular Roller
Laying the Tint — Cleaning the Film

Before inking the Medium, see that the Frame Clamp is placed flat upon the frame and locked to it securely by the lever F^1. Place the Medium upon its proper size inking pad. The Medium should rest evenly upon the pad, with the Frame Clamp projecting beyond the table-edge, to free it from chance dislocation.

The ink slab should be of stone, about 16 x 16 inches. Do not use glass. Any high-grade transfer ink is good for stone. Day's ink may be used for stone

and for photo-engraving work on cardboard. For direct work on metal, any of the good market inks used in the shops is practicable. With a small palette knife spread a layer of ink across the top of the slab. Use this as a "fountain" from which to feed by rolling the whole of the slab by means of the Ben Day Tubular Roller. Charge the slab evenly but not too heavily. Then pass the roller several times over the Shading Medium, supported by the inking pad, rolling *not back and forth*, but in *one direction only* and *toward you*, until the Medium is properly charged with ink. Light tints require more delicate inking than dark tints.

When transferring the film tint to the drawing by the stylus or rubber roller, obtain the full value of the tint—no more, no less—regulating your pressure to that end. If the back of the film needs lubrication for the working of the stylus, use vaseline, distributed and rubbed off again. If parts of the drawing not being



PRESSING TOOLS

1. Pointed Stylus. 2. Flat Stylus. 3. Hook Stylus. 4. ½ inch Rubber Roller. 5. 1½ inch Rubber Roller

worked upon require protection, stencils may be cut out of French folio paper. If using gum or gamboge as a stop-out on stone or metal, see that the stop-out is dry before working with the Medium.

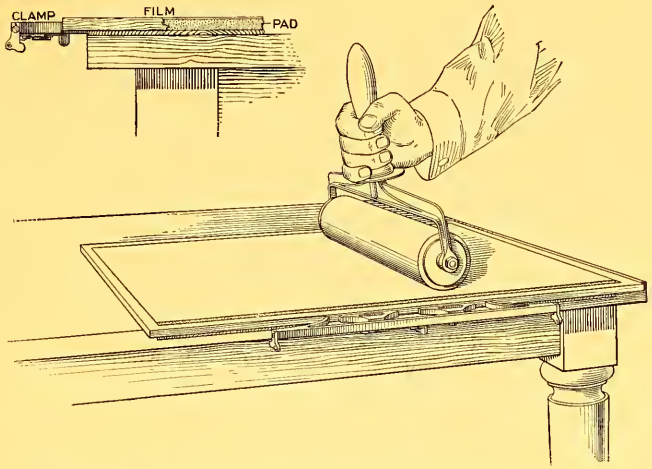
Have a safety can with benzine and soft rags for cleaning the Mediums, ink slab and inking roller. Clean everything at the end of the day's work to avoid ink hardening. *Do not use lye* to clean the inking roller. Do not use a film that has been in use since the day before without first washing it off with benzine. Fan it to exhaust the benzine. Even on the same day, if the film is of fine texture, such as a half-tone—and has already been used on another subject—clean it before using it; otherwise it may show unequal color in the tint at those parts which, having been unused, have hence been supercharged. Keep the ink slab covered when not in use. Do not leave the films lying face up. Avoid dust. Keep the films free from resin powder.

If any of the mechanical adjuncts should get out of order, refer to the detailed illustrations Figures 1 and 2 and write or telegraph the number or symbol of the part requiring replacement.

There should be a special space in the Art Department for the Ben Day Shading Medium Service. The work-table should be steady and level; it should have north light, if possible, and be away from any radiator.

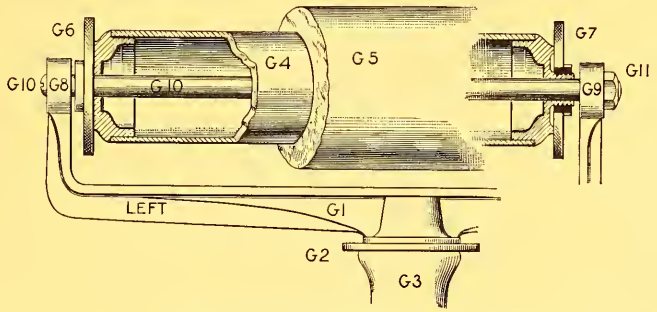
SP-286.

INKING A SHADING MEDIUM



THE MEDIUM MOUNTED ON THE INKING PAD

The Medium should be placed evenly on the aluminum pad, with the *Frame Clamp extending beyond the table edge*, so that the clamp may not be displaced while inking.



THE BEN DAY TUBULAR ROLLER

Has hollow core and aluminum frame. The roller, not bound to core, is free to shrink or expand according to climatic changes, thus ensuring a constantly even plane.

ROLLER PARTS: — G^1, Aluminum frame. G^2, Guard, holding handle from ink slab. G^3, Handle. G^4, Hollow mandrel. G^5, Tubular roller. G^6, End cap, fixed. G^7, End cap, threaded, fitting screw-hub of G^4 (removable when drawing roller skin off or on G^4). G^8, G^9, Bearings for the support of G^{10}. G^{10}, Axle rod with screw-head at left end and thread at right, for engaging G^{11}. G^{11}, Binding nut of G^{10}. — To *remove* a roller skin, unscrew G^{11}, unscrew and draw out G^{10}, unscrew G^7 and draw G^5 off G^4. — To *replace* a roller skin, draw it on G^4, evenly; screw on G^7, replace G^{10} through G^8 and G^4, screwing it back into G^9, then screw on nut G^{11}.

BEN DAY, INC.

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